subjects with a <50% reduction in bleeding events, the incremental cost-effectiveness ratio in the prophylaxis vs. on demand period was US$ 77,067 per bleeding event avoided. **CONCLUSIONS:** Cost-effectiveness ratios are within the commonly accepted willingness-to-pay threshold. The incremental cost-effectiveness ratio noticeably was more favorable in responders, which is totally attributable to the marked difference in effectiveness. Moreover the Incremental cost per bleed avoided during prophylactic period suggest prophylaxis to be more cost effective in children, who could derive the greatest benefit in terms of joint disease and long-term disability.

PSY21

COST-EFFECTIVENESS OF POSACONAZOLE VERSUS FLUCONAZOLE IN THE PROPHYLAXIS OF INVASIVE FUNGAL INFECTIONS IN PATIENTS WITH GRAFT-VERSUS-HOST DISEASE (GVHD) IN TURKEY

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OBJECTIVES: Invasive fungal infections (IFIs) have emerged as the major infection-related cause of morbidity and mortality in patients undergoing hematopoietic stem cell transplantations (HSCT). Ullmann et al published a RCT in allogeneic HSCT recipients with grade 2–4 or extensive chronic GVHD that compared the efficacy of posaconazole and fluconazole in the prevention of IFIs. Posaconazole was shown to be as effective as fluconazole in preventing IFIs (5.3% vs. 9.0%) and reduced IFI-related mortality (2.7% vs. 8.0%). We evaluated posaconazole cost-effectiveness from the Turkish health care system perspective. **METHODS:** A trial-based decision-tree model was developed. The probabilities of experiencing an IFI, IFI-related death, and death from other causes over 112 days post treatment were provided from Ullmann trial. The model was extended to a lifetime horizon, in which survival within the initial two years was based on the Ullmann trial and survival beyond two years was based on adjustment of national life tables by standardize mortality rates obtained from literature. IFI-related costs were provided from local literature. The model was used to estimate costs, life-years saved (LYS), and the incremental cost-effectiveness ratio (ICER) of posaconazole vs. fluconazole (year 2012). **RESULTS:** Posaconazole treatment appeared to be more effective with increased LYS (3.90 vs. 3.67) however, more costly (32,717 USD vs. 31,298 USD) than the alternative over a lifetime horizon. The ICER of posaconazole was 6,373 USD/LYS compared to fluconazole. Univariate sensitivity analysis was conducted to assess the effects of parameter uncertainty, particularly concerning treatment efficacy and long-term mortality. With almost all assumptions that were analyzed, posaconazole ICER was well below the national gross domestic product per capita per LYS threshold (10,444 USD/LYS). **CONCLUSIONS:** Posaconazole appeared to be cost-effective vs. fluconazole in the prophylaxis of IFIs among patients with GVHD undergoing allogeneic HSCT.

PSY22

A COST-EFFECTIVENESS ANALYSIS OF PARECOXIB IN THE MANAGEMENT OF POST-OPERATIVE PAIN IN THE GREEK HEALTH CARE SETTING

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OBJECTIVES: To assess the costs and outcomes of parecoxib used in combination with opioids vs. opioids alone in the post-operative management of surgical patients in Greece. **METHODS:** A model comparing parecoxib plus opioid treatment, to opioids alone during the first three days post-surgery was developed. Clinical efficacy was based on a phase-III randomized, double-blind clinical trial that also provided the frequencies of occurrence of clinically meaningful opioid-related adverse events (CMEs) for both treatment arms. Resource use associated with each CME was elicited via strictly structured questionnaire based interviews to a panel of experts (surgeons and anesthesiologists). Cost calculations followed a third party payer perspective (Euros, 2012). Treatment effectiveness was calculated in Summed Pain Intensity scores (SPI). **RESULTS:** According to the clinical trial, patients under parecoxib plus opioids had lower pain scores (SPI 59.20 vs. 80.80) and fewer CMEs (0.62 vs. 1.04 per patient) compared to opioids alone, for a 3-day period. This led to a full offset of the excess cost of the addition of parecoxib and to potential savings of 858€ (total cost per patient: 819.08 vs. 1,677.08, respectively). Savings were mainly attributable to decreased CMEs, reductions in ICU and general ward bed-days as well as to reduced physician and nurse time. Results were sensitive with regards to probabilities of occurrence or co-occurrence of CMEs (>2 CMEs occurring simultaneously), although the above was of limited impact. Medication costs had a minimal impact on the results of the sensitivity analysis. Extending the model cycle to 5-days post-operatively was associated with additional savings of 1,139.9€ per patient, compared to opioid use alone (total cost per patient: 1,063.2 vs. 2,203.1 respectively). **CONCLUSIONS:** Parecoxib can be a valuable addition to opioid treatment for post operative pain, improving pain relief, reducing the probabilities of CME occurrence and lowering overall costs of treatment.

PSY23

PHARMACOECONOMIC ASPECTS OF DEXKETOPROFEN TROMETAMOL AND DICLOFENAC IN ACUTE POST-TRAUMATIC PAIN

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OBJECTIVES: Pharmacoeconomic aspects of application of dexketoprofen trometamol in routine clinical practice in Russia remain unclear. The aim of our research is comparative pharmacoeconomic analysis of administration of dexketoprofen trometamol in reduction of acute post-traumatic pain. **METHODS:** The estimation of pain relief strategies with dexketoprofen and diclofenac was performed by a cost-effectiveness analysis based on modeling method. We have calculated the costs of treatment for pain syndrome in injuries of lower extremities in two groups of 100 patients, who received dexketoprofen or diclofenac. The choice of diclofenac was motivated by the fact that it is the most frequently prescribed NSAID included into the National Essential Drug List. The main efficiency measure was the level of analgesia achieved within one hour after administration of a medication estimated using Visual Analog Scale (VAS). Only direct costs of pain syndrome relief were included in cost analysis in our model. **RESULTS:** The costs of therapy in diclofenac and dexketoprofen groups were 1033.0 RUB and 1611.1 RUB, respectively. Final cost-efficiency ratio was 39.73 RUB per unit in diclofenac, and 20.92 in dexketoprofen group. Incremental cost-effectiveness ratio (11.34 RUB/unit) revealed that treatment with dexketoprofen trometamol demands additional funding for significantly greater effect compared to diclofenac. Sensitivity analyses indicated these results to be robust. **CONCLUSIONS:** The results of our study suggest that the application of dexketoprofen trometamol has the best cost-effectivness in acute posttraumatic syndrome compared to traditionally prescribed diclofenac.

PSY24

ECONOMIC EVALUATION OF OPIOID SUBSTITUTION TREATMENT (OST) IN GREECE

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OBJECTIVES: To perform an economic evaluation of OST in Greece. Individuals wishing to participate in OST are increasing, since only 4,046 opioid-dependent persons were participating in OST programs in 2008, whilst 5,386 who were willing to receive OST were on the waiting list for treatment, with a mean waiting-list time of 6 years. **METHODS:** Data were gathered from the OKANA and EKTEPN, the Greek REITOX (European Information Network on Drugs and Drug Addiction) Focal Point of the European Monitoring Centre for Drugs and Drug Addiction .The total number of patients included in the analysis was 4046 . Statistical tests were used to test the homogeneity between treatment programs as well as among geographical areas. Cost-minimization and cost-effectiveness analyses were conducted to compare methadone and buprenorphine monotherapy with buprenorphine–naloxone. A budget-impact analysis was undertaken in order to estimate the potential costs and savings that could be gained from the expansion of OST programs in Greece. Deterministic and probabilistic sensitivity analyses were performed. To represent the output uncertainty from probabilistic sensitivity analysis scatterplots of 2000 simulated ICERs were produced on the cost-effectiveness plane as well as cost-effectiveness acceptability curves. **RESULTS:** Cost-minimization analysis predicted that buprenorphine monotherapy is more costly than buprenorphine–naloxone. Cost-effectiveness analyses demonstrated that buprenorphine–naloxone was the dominating therapy in terms of mortality avoidance and completion of treatment. In comparison to methadone, buprenorphine–naloxone reduced the mean cost by 49%; increased by ~1.5-fold the percentage of participants completing their treatment; and reduced by ~2.5-fold the percentage of deaths. Sensitivity analyses did not reverse the findings. **CONCLUSIONS:** Our findings demonstrated that switching to buprenorphine-naloxone treatment would result in significant savings, reduce waiting lists and increase access to OST. The introduction of pharmacoeconomic studies in Greece would support rational decision-making in an era of economic recession and uncertainty.

PSY25

ETANERCEPT IN EARLY RHEUMATOID ARTHRITIS: ECONOMIC EVALUATION FROM THE PUBLIC PAYER PERSPECTIVE IN BRAZIL

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OBJECTIVES: Early diagnosis and aggressive treatment is crucial in rheumatoid arthritis to prevent disease development, joint destruction and cardiovascular disease, which start within first 2 years of disease. This study aims to perform cost-effectiveness analysis of etanercept in early rheumatoid arthritis (ERA) treatment, defined as disease duration from 3 months to 2 years, from the public payer perspective in Brazil. **METHODS:** A decision model was developed to simulate ERA evolution after treatment with etanercept(50mg/week)+methotrexate (ETN+MTX) or methotrexate (MTX) as first-line therapies and their associated direct costs over a 5-year time horizon. An initial decision tree estimated the number of patients entering Markov model in the following health states: 'remission', 'non-remission', 'discontinuation', and 'non-response' (ACR20 criteria). Patients starting on 'remission' or 'non-remission' states could transit between them or to 'orthopedic intervention' (ORT), 'cardiovascular event – myocardial infarction/stroke' (CVE), 'all-cause death', 'cardiovascular death', and 'surgery-related death,' or switch to second-line (adalimumab+MTX or infliximab+MTX). Patients initiating on 'discontinuation' or 'non-response' states switched directly to second-line therapy. Remission (DAS28<2.6) was considered as effectiveness outcome. Clinical data were extracted from literature, and costs from Brazilian official databases, presented in 2012 USD. Univariate sensitivity analyses were performed. A 5% discount rate was applied annually for costs and benefits. **RESULTS:** For each 1,000 patients, 244 and 106 were in remission at year 5 for ETN+MTX and MTX groups, respectively. The number of [ORT; CVE] was [102; 38] for ETN+MTX and [125; 43] for MTX. Projected treatment costs for ETN+MTX and MTX were 54,433,960USD, and 40,175,096USD, respectively. In cost-effectiveness analysis, ETN+MTX was the most effective alternative (incremental effectiveness: 138) and presented an incremental cost (14,258,866USD) with incremental cost-effectiveness ratio of 102,968USD per remission achieved. **CONCLUSIONS:** Etanercept in ERA treatment showed to prevent disease progression, with more achieved remissions and

avoided ORT and CVE, from the public perspective in Brazil, with associated increase costs.

PSY26

COST-EFFECTIVENESS OF HEMATOPOIETIC STEM CELL MOBILIZATION STRATEGIES IN MULTIPLE MYELOMA AND LYMPHOMA PATIENTS IN CZECH REPUBLIC

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OBJECTIVES: Blood stem cell mobilization, which is important as a source of hematopoietic stem cells for transplantation, is performed using granulocyte colony-stimulating factor (G-CSF), but is ineffective in around 20% of so called *poor mobilizers*. Combining G-CSF with plerixafor increases the percentage of successful mobilizations. The drug has orphan drug status and is approved for lymphoma and multiple myeloma patients. The objective was to compare the cost-effectiveness of three available mobilization schemes: i) the use of plerixafor "on demand" (POD) even during a first mobilization attempt in all patients who show inadequate response, ii) the standard use of Plerixafor strictly within a standard re-mobilization scheme following failure of the first mobilization (SSP), and iii) the standard (re-)mobilization scheme without Plerixafor (SSNP). **METHODS:** Decision tree models were built to compare clinical outcomes and direct costs from the payer's perspective in all three strategies. They were populated with efficacy resource use data from a first-of-a-kind patient registry of all patients with plerixafor administered (n=93) in 6 Czech centres. **RESULTS:** The success rates and costs for POD, SSP and SSNP were 94.9% and EUR 5,736, 94.7% and EUR 6,416, and 84.7% and EUR 4,775, respectively. The direct cost per successfully treated average patient was EUR 6,046, EUR 6,776 and EUR 5,641, respectively. The cost of the first mobilization attempt with G-CSF was EUR 3,905 per patient. The cost of re-mobilization of a poor mobilizer was EUR 4,629 with G-CSF only and EUR 13,354 if plerixafor was added. The total cost of plerixafor used on-demand in the sub-cohort of poor mobilisers was EUR 13,645. **CONCLUSIONS:** Plerixafor substantially increases chances of success and its use is more cost-effective "on demand" during early mobilization than in subsequent re-mobilization.

PSY27

A COST-EFFECTIVENESS COMPARISON OF ICATIBANT AND C1-ESTERASE INHIBITOR CONCENTRATE FOR THE SYMPTOMATIC TREATMENT OF ACUTE ATTACKS OF TYPES I AND II HEREDITARY ANGIOEDEMA IN THE UK SETTING

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OBJECTIVES: To evaluate the cost-effectiveness of icatibant [Shire HGT] 30 *mg subcutaneous* versus C1-esterase inhibitor concentrate (C1-INH) [CSL-Behring] 20 IU/kg *intravenous* for moderate to severe attacks of hereditary angioedema (HAE) types I and II in the UK setting. **METHODS:** A probabilistic cost-utility model was developed over a time horizon of 96 h (the duration of a single acute attack). Comparisons were made for therapy administered at home and in hospital. Quality-adjusted life years (QALYs) were estimated by combining the time to onset of symptom relief with utility weights for the health states before and after onset of symptom relief. Clinical evidence and other model parameters were identified by systematic review. An indirect comparison using previously published methods was conducted. Costs relating to drug acquisition; administration; repeat injections; monitoring and supportive care; hepatitis A and B vaccinations for C1-INH; self-administration training; and adverse events were considered. Probabilistic and univariate sensitivity analyses were conducted. **RESULTS:** The indirect analysis suggested a non-significant trend towards a reduced time to symptom relief for icatibant when compared with C1-INH. In the economic analysis, there was a non-significant inter-treatment difference in estimated QALYs per attack, equivalent to ~0.75 quality-adjusted life hours in icatibant's favour. In the base-case analysis (SmPC dosing and NHS list price), total costs per attack were estimated as £1,577 for icatibant and £2,169 for C1-INH; a saving of £592 (95%CI: £394–£715) per attack with icatibant. **CONCLUSIONS:** This is one of the first comparative health economic models presented for HAE. The systematic approach to data identification and analysis led to successful submissions to SMC and AWMSG in this orphan indication. The analysis demonstrated that icatibant reduces costs versus C1-INH (20 IU/kg at SmPC dosing) when treating acute HAE attacks in the UK setting.

PSY28

COST-EFFECTIVENESS OF FEBUXOSTAT IN MANAGING HYPERURICEMIA IN GOUT PATIENTS IN SPAIN

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OBJECTIVES: To estimate the cost-effectiveness of febuxostat compared with allopurinol in the treatment of hyperuricaemia in patients with chronic gout when urate deposition has already occurred. **METHODS:** A Markov model was developed to estimate costs, clinical outcomes, and QALYs for patients with hyperuricaemia and chronic gout. Febuxostat 80 mg/120 mg as first line therapy (with or without allopurinol as second line therapy) and as second line therapy (after first line allopurinol) was compared to current standard therapy, i.e. allopurinol 300 mg daily with no second line treatment. A dichotomous sUA response/no response outcome after the first 3 months of each active treatment was used to decide when patients switched to a second line treatment. The definition of sUA response was applied using a target sUA level of < 6.0 mg/dL which was based on the latest EULAR guidelines. Efficacy data (sUA levels) were derived from febuxostat Phase III trials (APEX, FACT). Unit costs were derived from official tariffs (€2009). 3% discount rate and 5-year time horizon was applied in the primary analysis. Sensitivity analyses were performed to assess the impact of variations on all model inputs and subgroup analyses (patients intolerant to allopurinol, or patients having mild-moderate renal impairment). Analyse was carried out from the National Health System perspective. **RESULTS:** The addition of febuxostat in any therapeutic strategy (both as first-line or second line treatment) is an efficient option, with incremental cost-effectiveness ratios (ICER) compared with standard allopurinol 300 mg ranging from 3,800 € to 6,600 €. The cost-effectiveness results show that the two-step two-drug treatment strategies provide additional QALY benefit over the single-step single-drug treatment strategies. **CONCLUSIONS:** Results suggest that febuxostat is a cost-effective treatment in Spain for the management of hyperuricemia in patients with gout, showing ICERs far below the commonly cited efficiency threshold in Spain (30,000€/QALY).

PSY29

TITLE: THE CHALLENGE OF CONDUCTING A PROSPECTIVE ECONOMIC EVALUATION OF A PHARMACOGENETIC TEST

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OBJECTIVES: A pharmacogenetic test (PGx) prior to prescribing azathioprine is available to identify patients at increased risk of dose-limiting side effects (eg. neutropaenia). This study had two aims (1) to evaluate whether the PGx is a cost effective use of health care resources and (2) to understand whether it is feasible to conduct a prospective economic trial of a PGx. **METHODS:** An economic evaluation integrated into a prospective, pragmatic, multi-centre (n=19) randomised controlled trial (RCT) compared (i) PGx with standard care (SC); 167 patients to (ii) SC comprising step-wise dose escalation of azathioprine; 166 patients. The perspective of the UK NHS, with 4-month time horizon, was used to be consistent with the original RCT (the TARGET study). Individual patient-level data on resource use (primary care, secondary care, drug-use, monitoring tests) and health status (EQ-5D) were collected for all recruited patients. Quality adjusted life years (QALYs) were calculated using UK-population EQ-5D tariffs. Unit costs were collected from national sources (price year: 2010). GLM regression models estimated incremental costs and QALYs. Uncertainty in the results was characterised through the use of non-parametric bootstraps and cost-effectiveness acceptability curves with one-way sensitivity analysis to explore methodological assumptions. **RESULTS:** PGx with SC was £436 (95% CI: -£1064, £119) less expensive but with fewer QALYs 0.00451 (95% CI: -0.01291, 0.00430) compared with only SC. Analysis indicated that clinicians did not follow azathioprine prescribing recommendations in the PGx arm, resulting in no difference in the dosage of azathioprine between the two arms at 4-months (p=0.25). Uncertainty in the results was driven by problems associated with prescribing behaviour as well as low power due to small sample size. **CONCLUSIONS:** The analysis found that PGx could be a cost-effective use of resources but key uncertainties remain, driven by the challenge of conducting a trial-based economic evaluation of a diagnostic PGx.

PSY30

COST-EFFECTIVENESS OF USTEKINUMAB IN THE MANAGEMENT OF MODERATE-TO-SEVERE PLAQUE PSORIASIS IN MEXICO

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OBJECTIVES: To evaluate the cost-effectiveness of ustekinumab for the treatment of moderate-to-severe plaque psoriasis from the perspective of the public health care institutions in Mexico. **METHODS:** A Markov model was developed to simulate patients with moderate-to-severe plaque psoriasis. Biologic therapies compared were ustekinumab 45mg every 12 weeks, adalimumab 40mg every two weeks, etanercept 50mg twice a week and infliximab 5mg/kg every eight weeks. Measured by the Psoriasis Area and Severity Index (PASI), clinical response was derived from the latest published meta-analysis. PASI response was translated into QALYs in two steps: (1) defining the correlation between PASI levels and the Dermatology Life Quality Index (DLQI); and (2) using a formula to predict utility from DLQI score derived from a mapping exercise of the DLQI with the EQ-5D. The model considered expenditure on drugs, monitoring visits, adverse events and inpatient stays. Costs were obtained from Mexican public institutions. Health and economic outcomes were estimated over a 10-year time horizon with cycle length of 12 weeks. Cost and QALYs were discounted at 5% annually. **RESULTS:** For patients with body weigh above 60kg, Adalimumab was an extended dominated strategy by ustekinumab. For these patients, the incremental cost-per-QALY of ustekinumab vs etanercept was US$19,542, whereas the incremental cost-per-QALY of infliximab vs ustekinumab was US$87,745. For patients with body weigh below 60kg, infliximab is more effective and less costly than adalimumab and ustekinumab, while the incremental cost-per-QALY vs etanercept was US$5,202. **CONCLUSIONS:** Considering the GDP per-capita of Mexico in 2010 (US$9,123), and according to the WHO Commission on Macroeconomics and Health, in patients with body weigh above 60kg ustekinumab is a cost-effective strategy (≤3xGDP per-capita /QALY gained); while in patients with body weigh below 60kg infliximab is a highly cost-effective strategy (≤1xGDP per-capita/QALY gained). Probabilistic sensitivity analysis results did not change the conclusions.